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XL.—*Notes on African Non-marine Mollusca, with Descriptions of many new Species (cont.).* By M. CONNOLLY.

[Plate I.]

Family Achatinidæ, von Martens, 1879.

IN dealing with the members of this family I would explain that all my measurements are taken with the shell lying flat on its back, aperture upwards, and that the length of last whorl is the distance between the extreme base of the aperture and the centre of the suture immediately above it. Although not strictly accurate, the term *length* of whorl denotes the vertical distance between sutures, in order to avoid any confusion with the *breadth* of spire.

Subfamily STENOGYRINÆ, Fischer, 1883.

Genus PSEUDOGLESSULA, O. Boettger, 1892.

Thin, corneous shells, more or less elongate, sculptured to the apex with prominent transverse striæ.

Subgenus PSEUDOGLESSULA, s. s.

Shell elongate, imperforate.

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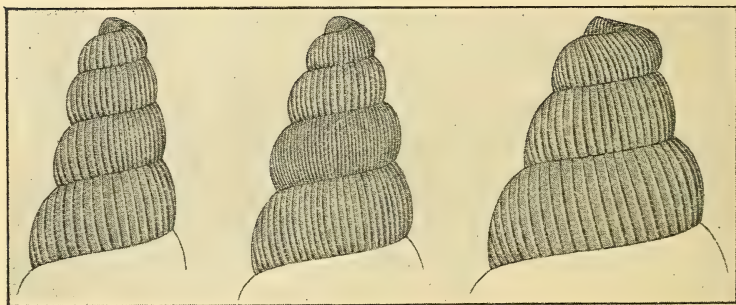
Pseudoglessula mutabilis, sp. n.
(Pl. I. fig. 22 ; text-fig. 1, p. 346.)

Shell of moderate size, imperforate, turritiform, thin, asperate, translucent, corneous brown. Spire produced, sides regular, extremity of apex involute. Whorls 7, not very convex, gradually increasing, carinate round the base, sculptured to the apex with regular, slightly curved and oblique, transverse costulæ, which are closer together on the 2nd and 3rd than on the first whorl, and become very gradually wider apart again on the 4 later ones, there being 9 in 2 mm. on the face of the last, which is smooth on its base ; between the costulæ are some fainter transverse striæ and an occasional faint trace of microscopic spiral sculpture ; suture

Fig. 1.

Fig. 2.

Fig. 3.

*Ps. mutabilis.**Ps. mutandana.**Ps. transenna.*

Apical structure, $\times 12$.

simple, nearly horizontal, well-defined. Aperture quadrate, peristome simple, acute, columella short, rather concave, sharply truncate at base, of paler colour than the rest of the shell.

Long. 7·9, lat. 2·7 ; apert., alt. 2·1, lat. 1·2 ; last whorl 3·7 mm.

Hab. KENYA, Kekumega (*Percival*).

A more slender species than *cruda*, Pilsbry, and with shorter whorls than *lemairei*, D. & G., whose first 2 whorls, moreover, must be far smoother than in the new species. It agrees rather closely in form with *Pseudoglessula gracilis* (Mts.), but is more closely sculptured, especially on the first whorl.

Pseudoglessula mutandana, sp. n.
(Pl. I. fig. 23 ; text-fig. 2, p. 346.)

Shell of fair size, turritiform, imperforate, thin, asperate, semitransparent, corneous yellow-brown with an occasional dark red streak. Spire produced, sides slightly convex, extremity of apex minutely involute. Whorls 8, fairly convex, regularly increasing, subcarinate round the base, sculptured to the apex with regular, nearly straight and vertical, transverse costulae, which are close together on the first, much further apart on the 2nd, and close again on the 3rd whorl, after which they increase gradually in distance, there being 8 in the space of 2 mm. on the face of the last whorl, which is rather smoother on its base; the intervals between the costulae are filled with a few faint irregular transverse striae and a general appearance of corrugation, rather than spiral sculpture; suture simple, well-defined. Aperture subrhombic, peristome simple, acute, columella rather pale, straight, erect, sharply truncate at extreme base; paries white.

Long. 10·1, lat. 3·2; apert., alt. 2·5, lat. 1·7; last whorl 4·5 mm.

Hab. UGANDA, Lake Mutanda (*Kemp*).

Possibly only a local race of *Ps. cruda*, Pilsbry, from which, however, Dr. Pilsbry informs me that it differs in its ribs being nearly twice as far apart as in his species.

Pseudoglessula perobtusa, sp. n. (Pl. I. fig. 8.)

Shell rather large, elongate-turritiform, imperforate, thin, silky, transparent, pale olivaceous. Spire produced, sides regular, apex rounded. Whorls 9, moderately convex, regularly increasing, faintly bluntly carinate towards the base, sculptured practically to the apex with close, regular, prominent, nearly straight and vertical transverse striae, which are slightly closer together on the first and become almost obsolete on the base of the last whorl; suture simple, well-defined. Aperture subovate, peristome simple, acute; outer lip straight in profile, receding a little to the base; columella short, erect, strongly truncate at base.

Long. 22·1, lat. 5·4; apert., alt. 5·0, lat. 2·5; last whorl 9·0 mm.

Hab. BELGIAN CONGO, Burunga, Mt. Mikenö, 6000 ft. (*Kemp*).

A rather ordinary yellowish shell with somewhat unusually obtuse apex, not particularly resembling any species known

to me ; it is slightly narrower and more carinate on the last whorl than *pileata*, Mts., with nearly a whorl more in the same length, while the striation in *pileata* is more distant on the first two than on the later whorls, whereas in *perobtusa* it is nearly equidistant throughout.

It is rather doubtful whether the group of large yellow shells to which this and the next species belong, and which appear to lay round, rather than elongate, eggs, should be placed in *Pseudoglessula* or *Subulina* ; owing, however, to their agreeing in apical sculpture with *Pseudoglessula*, it is certainly more convenient to attribute them to that genus until the anatomy is fully known.

Pseudoglessula batesi, sp. n. (Pl. I. fig. 6.)

Shell rather large, elongate-turritiform, imperforate, rather thin, silky, nearly transparent, pale yellowish olivaceous. Spire produced, sides regular, apex obtusely rounded. Whorls 10, convex, gradually increasing, without margination on the last, sculptured almost to the extreme apex with regular, well defined, nearly straight and vertical, transverse striæ, equidistant and very close on the last 7 whorls, very slightly more distant on the 3rd and a little more so on the 2nd ; suture simple, well defined. Aperture ovate ; peristome simple, acute, outer lip nearly straight in profile, receding a little to the base ; columella slightly concave, sharply truncate.

Long. 25·2, lat. 6·2 ; apert., alt. 6·2, lat. 2·7 ; last whorl 10·2 mm.

Var. ex forma *major*. (Pl. I. fig. 7.)

A rather more obese form, with slightly, but noticeably, longer whorls, though the same in number as in the type.

Long. 26·8, lat. 7·1 ; apert., alt. 7·0, lat. 3·5 ; last whorl 11·6 mm.

Hab. CAMERUN, Bitze (*Bates*).

Although it is remarkable that this conspicuous shell does not appear to have been already described, I cannot reconcile it with any recorded species. It is nearest to *Pseudoglessula strigosa* (Morelet) from Angola, from which it differs in having finer apex and rather shorter whorls.

Pseudoglessula fasciata, nom. nov.

As *Bulimus kirkii*, Craven (P. Z. S. 1880, p. 217), is undoubtedly a *Pseudoglessula*, the name must yield precedence to that of *Buliminus kirki*, Dohrn (P. Z. S. 1865,

p. 232), which is also a *Pseudoglessula* of the subgenus *Pseudocerastus*.

I therefore rename Craven's species *fasciata* as being the only banded *Pseudoglessula* yet recorded, although the bands are not a constant feature in the species.

Section KEMPIOCONCHA, Preston, 1913.

Shell large, elongate, perforate.

Pseudoglessula (*Kempioconcha*) *pilsbryi*, nom. nov.

Pilsbry has rightly pointed out that *Ena kivuensis*, Preston, is a *Pseudoglessula*. It was described on p. 50 of the Rev. Zool. Africaine, 1913, while on p. 53 appears *Kempia kivuensis*, Preston, which is also a *Pseudoglessula*, possibly of the same subgenus as the above-mentioned species.

Kempia kivuensis must therefore be rechristened, and I have much pleasure in naming it after the greatest conchologist of our time, in particular recognition of his work on the Congo mollusca.

Section PSEUDOCERASTUS, Germain, 1918.

Founded for perforate species of the group of *Ps. boivini* (Morelet). There does not appear to be room in the genus for both the perforate groups, *Kempioconcha* and *Pseudocerastus*, and the latter will probably have to retire into synonymy, but there is a slight difference in appearance between them, which may render it advisable to maintain the distinction until the anatomy of *Ps. pilsbryi* is known.

Pseudoglessula (*Pseudocerastus*) *transenna*, sp. n.

(Pl. I. fig. 17 ; text-fig. 3, p. 346.)

Shell of fair size, subconoid, perforate, thin, silky, semi-transparent, corneous bronze. Spire moderately produced, sides regular, apex slightly involute. Whorls 6, convex, regularly increasing, the last showing faint basal margination, the first portion of the protoconch a trifle lower than the remainder, so that the apex is distinctly hollow ; sculptured to the apex with strong, regular, transverse costae, which are sinuous and closer on the first 2 whorls, and nearly straight, slightly oblique, and gradually increasing in distance on the remainder, which are also covered with close, oblique, criss-cross striation, forming, under a microscope, a regular pattern of lattice-work all over the shell : suture simple, well defined ; aperture subovate, peristome simple, acute ; outer lip well curved outward, straight in profile ;

columella slightly concave, margin whitish, narrowly reflexed, half covering the narrow umbilicus; callus none.

Long. 12·7, lat. 6·1; apert., alt. 5·0, lat. 2·9; last whorl 7·7 mm.

Hab. KENYA, forests N. of Mt. Kenya (*Percival*).

A beautiful species, remarkable for its involute apex and micro-cancellate sculpture.

Pseudoglessula (Pseudocerastus) solitudinum, sp. n.
(Pl. I. fig. 18.)

Shell of moderate size, conoid, perforate, thin, silky, semi-bleached in the type, but normally semitransparent and brownish corneous. Spire moderately produced, sides regular, apical angle about 43° , apex rather blunt. Whorls 6, moderately convex, regularly and rather rapidly increasing, with only the faintest trace of basal margination, sculptured to the apex with close, regular, well-defined, slightly curved, and oblique transverse striæ, almost equidistant except on the 2nd whorl, where they are very slightly further apart than on the remainder; suture simple, well defined. Aperture subovate, slightly oblique; peristome simple, acute; outer lip nearly straight in profile, receding but little to the base; columella concave, margin evenly reflexed, umbilicus narrow but deep.

Long. 11·5, lat. 5·8; apert., alt. 4·7, lat. 2·7; last whorl 7·2 mm.

Hab. KENYA, Taru Desert (*Percival*).

An ordinary little species, apparently mature, bearing some resemblance to several of the smaller forms of the *boivini* group, but not conspecific with any of them. It has rather finer striæ and longer whorls than *kidetensis*, Smith—perhaps its nearest relation.

Pseudoglessula (Pseudocerastus) ingloria, sp. n.
(Pl. I. fig. 19.)

Shell of moderate size, turritiform, perforate, thin, silky, semitransparent, normally brownish corneous. Spire produced, sides almost regular, apical angle about 30° , apex bluntly submamillate. Whorls 7, not very convex, regularly increasing, the last showing only a faint trace of basal margination, all but the extreme apex covered with close, regular, well-defined, nearly straight, slightly oblique, transverse striæ, very slightly more distant on the first 2 than on the later whorls and fainter on the base of the last; suture simple, well defined. Aperture sub-oval, peristome simple,

acute; columella erect, very slightly tortuate, margin narrowly triangularly reflexed, nearly covering the very small umbilicus.

Long. 10·9, lat. 4·8; apert., alt. 4·5, lat. 2·2; last whorl 6·5 mm.

Hab. KENYA, Taru Desert (*Percival*).

A still more ordinary little shell, rather weather-worn and probably somewhat immature, but in no way recognisable as the young of any of the larger species of the *boivini* group. *Ps. marguerite* (Preston), from a somewhat adjacent locality, has a relatively shorter aperture and appears to be an altogether smaller species, while the striae on its 2nd whorl are closer together and do not show such a marked difference in distance between them and those on the third; the umbilicus, too, in *marguerite* is considerably less hidden than in *ingloria*. Except for these differences, which may not, perhaps, prove to be constant, the latter might well be considered a more adult example of the former.

Pseudoglessula terrulenta (Morelet), 1883.

Originally described from Gaboon as a *Bulimus*, and tentatively placed by Pilsbry (1906) in *Curvella*, this species, whose type is in the British Museum, is a small *Pseudoglessula*, so near akin to the better-known *P. stuhlmanni* (Mts.) that the two may eventually prove to be conspecific. *P. terrulenta* may now be recorded from Bitze, Camerun (*Bates*), whence it has been rather widely distributed by Preston as a *Cerastus*, bearing the name of the province last mentioned; this, however, has never been published, and need not be introduced into literature.

Genus HOMORUS, Albers, 1850.

Homorus burnessi, sp. n. (Pl. I. fig. 1.)

Shell large, elongate-turritiform, imperforate, comparatively thin, smooth, shining, nearly transparent, pale yellowish corneous. Spire much produced, sides regular except for slight attenuation at the 5th whorl, apex narrowly conoid. Whorls 11, flattish, gradually increasing, sculpture limited to very faint, flat, fairly regular, nearly straight, slightly oblique transverse striae; suture simple, rather oblique. Aperture acuminate-ovate, peristome simple, acute, outer lip moderately curved outward, nearly straight and not receding much to the base in profile; columella concave, rectangularly truncate at base.

Long. 58·0, lat. 13·2 ; apert., alt. 13·3, lat. 6·7 ; last whorl 22·0 mm.

Hab. KENYA, Kiu District (*Burness*).

A fine species, with longer flatter whorls than *H. egregius*, Preston.

Homorus egregius, Preston, 1911.

This species is rather widely distributed in Kenya Colony, varying considerably in contour, though very little in sculpture or volution. The most slender specimen that I have seen, from Urguess, contains $12\frac{3}{4}$ whorls, and measures :—

Long. 52·0, lat. 10·6 ; apert., alt. 11·2, lat. 5·8 ; last whorl 17·9 mm.

The following form seems worthy of varietal rank :—

Var. *ex forma inflata*. (Pl. I. fig. 5.)

Differs from type in greater breadth of spire and very slightly more convex whorls, which number $11\frac{1}{2}$ in a shell measuring :—

Long. 49·5, lat. 12·0 ; apert., alt. 11·4, lat. 6·3 ; last whorl 18·0 mm.

Hab. KENYA, Larogi Hills, 6000–7000 ft. ; Igembi Hills (*Percival*) ; Darugu R. Valley (*Harries*) ; Lari (*Gooch*).

Homorus woodhousei, sp. n. (Pl. I. fig. 9.)

Shells rather large, elongate, imperforate, thin, smooth, shining, transparent, pale yellowish olivaceous. Spire much produced, a little attenuate from the 7th whorl ; apex rounded. Whorls 10, rather convex, the first 3 smoothly, sparsely punctate, with a very faint appearance of rather irregular, scratchy, microscopic spiral striation, continuing at intervals on the later whorls, which are also closely covered with extremely faint, straight, oblique, transverse striæ, hardly visible except just below the suture ; suture moderately oblique, simple, rather shallow. Aperture sub-ovate ; peristome simple, acute ; outer lip nearly straight, receding considerably to the base ; columella erect, narrowly truncate.

Long. 23·6, lat. 5·3 ; apert., alt. 5·7, lat. 2·8 ; last whorl 10·3 mm.

Hab. UGANDA, Mt. Elgon (*Woodhouse*).

Nearly allied to *H. clarus*, Pilsbry, which was collected by Kemp on Mt. Mikenno and the E. coast of Lake Kivu, in the Belgian Congo. The latter, however, seems to be a rather larger form, and should always be separable from the more northern species, unless intermediates are subsequently found to occur.

Homorus illitus, sp. n. (Pl. I. fig. 2.)

Shell large, elongate-turritiform, imperforate, rather solid, rather rugose, but shining, translucent, chestnut-brown. Spire produced, sides regular, apex acutely mamillate. Whorls 11, rather flat, gradually increasing, the first micropunctate, 2nd and 3rd nearly smooth, with very faint, irregular, scratchy spiral lines: commencing faintly in the suture of the 3rd whorl, the remainder are covered with regular, nearly flat, curved, moderately oblique transverse striae, curved backward in the upper suture and fainter on the lower half of each whorl; the spiral sculpture continues nearly throughout, being visible, in patches, with a weak lens; suture simple, shallow. Aperture subovate, interior pale blue with a narrow brown border; peristome simple, acute; outer lip nearly straight in profile, receding moderately to the base; columella short, concave, abruptly truncate at its extreme base; paries white, devoid of epidermis.

Long. 31·5, lat. 7·9; apert., alt. 6·7, lat. 3·9; last whorl 11·5 mm.

Hab. KENYA, Lari (*Gooch*).

Type in British Museum.

A fine species, whose solid, varnished, unicoloured chestnut shell appears to differ from any other of the genus.

Homorus involutus (Gould), 1844.

1837. *Helix funiculata*, Valenciennes MS. (in Paris Museum).

1844. *Achatina involuta*, Gld. Proc. Boston Soc. i. p. 158.

1846. *Achatina fraseri*, Pfr. Symb. iii. p. 90.

1861. *Achatina foxcrofti*, Pfr. P.Z.S. p. 25.

The above synonymy may be accepted as correct. Pfeiffer himself acknowledged that *fraseri* was identical with *involutus*, and careful examination of the unfigured *foxcrofti*, the type of which is in the British Museum, proves it to be quite inseparable. As mentioned by d'Ailly, a prominent feature in *H. involutus* is the strong, distant rib-striation in, or just below, the early sutures after the first $1\frac{1}{2}$ whorls. The type set of *foxcrofti* are much bleached, but retain enough of the epidermis to show that it was originally dark brown, while they agree both in form and sculpture with Gould's species.

Homorus zebra, sp. n. (Pl. I. fig. 3.)

Shell rather large, elongate-turritiform, imperforate, rather thin, smooth, shining, pale yellow, the first 4 whorls rather

worn in the type, remainder painted with numerous narrow, nearly vertical, rufous streaks, for the most part straight, but occasionally irregular. Spire produced, sides nearly regular, apex acutely conic. Whorls 10, but little convex, gradually and regularly increasing, the first 2 much worn and malleate, the 3rd closely microscopically spirally striate, 4th similar to 3rd, but with faint transverse striæ, which continue more strongly on the remaining whorls, on all of which are occasional, irregularly spaced, rather distant, deep, spiral grooves; suture shallow. Aperture subovate, peristome simple, acute; outer lip but little outcurved, nearly vertical in profile; columella rather long, very slightly convex, narrowly obliquely truncate at base; callus not thick, but continuous up the columella and across the paries.

Long. 33·8, lat. 12·0; apert., alt. 9·7, lat. 5·4; last whorl 15·5 mm.

Hab. KENYA, Kekumega (*Percival*).

Perhaps nearest to *H. elliotti* (Smith)*, from which it appears to differ in being a slightly more slender form, with finer apex and rather shorter whorls.

Genus *NOTHAPALUS*, von Martens, 1897
(= *Kenia*, Preston, 1911).

Nothapalus iredalei (Preston), 1911.
(Pl. I. figs. 20 (type), 21.)

The type of this species is, unfortunately, in such indifferent condition that, until topotypes come to hand, it is inadvisable to attempt to differentiate from it a variety of races which hail from many parts of Kenya Colony and may, in some cases, represent distinct species. The extreme form from Kekumega, illustrated by fig. 21, is obviously far more obese than the type, but differs little from it in sculpture and length of whorl, and, as intermediates occur, I prefer to regard them all, for the present, as one species.

Nothapalus ugandanus, sp. n. (Pl. I. fig. 26.)

Shell small, subfusiform, imperforate, thin, smooth, shining, transparent, normally pale olivaceous. Spire produced, sides rather convex, apex narrowly rounded. Whorls 6, not very convex, rather rapidly increasing, the first 2 practically smooth, remainder engraved with rather close, but irregular, shallow transverse grooves, usually bent backward just below

* *Achatina elliotti*, Smith, Proc. Malac. Soc. i. (1895) pp. 323, 325.

the suture of the later whorls; there are usually, also, patches of very close, regular, microscopic spiral sculpture, but this is very faint and by no means a distinguishing feature; suture simple, shallow, Aperture subovate, peristome simple, acute; outer lip straight and nearly vertical in profile; columella short, concave, sharply truncate at base.

Long. 11·6, lat. 4·5; apert., alt. 4·5; lat. 2·2; last whorl 7·4 mm.

Hab. UGANDA, Kigezi, 6000 ft.; Ingezi, Mfumburu Mountains. BELGIAN CONGO, Buhamba; Burunga, Mt. Mikenö (*Kemp*).

Different broods vary slightly in contour, and were distributed before the war under manuscript names of the first three localities above mentioned, but the engraved sculpture is common to all, and there appear to be no geographical or other valid grounds for separating them.

Dr. Pilsbry kindly informs me that *N. ugandanus* differs from all of the species dealt with by him in his recent work on the Congo.

Nothapalus adelus, sp. n. (Pl. I. fig. 27.)

Differs from the preceding species in having a broader spire and rather closer sculpture, which is also of more normal pattern, the striæ being raised and imparting less the appearance of grooves than in *N. ugandanus*. The shell contains $6\frac{1}{2}$ whorls, and measures:—

Long. 11·25, lat. 4·7; apert., alt., 4·3, lat. 2·1; last whorl 7·25 mm.

Hab. Probably BELGIAN CONGO, between L. Mutanda and L. Kivu (*Kemp*).

Dr. Pilsbry informs me that *N. adelus* stands very close to *N. ptychoraphe*, Pilsb., but, though possessing the same number of whorls, it is smaller throughout and relatively wider than his species.

Nothapalus paucispira (von Martens), 1892.

1892. *Subulina paucispira*, Mts. Sitz.-Ber. Ges. nat. Fr. Berlin, p. 177.

1912. *Kenia obesa*, Prest. Rev. zool. Africaine, i. p. 326.

Paratypes of both the above are in the British Museum; they are quite inseparable, and Preston's species must be placed in synonymy.

Nothapalus unctus (Smith), 1903.

Described as a *Subulina*, this species is a *Nothapalus*,

apparently of pale yellow horn-colour, rather than brown, and with more convex whorls than *N. iredalei* (Preston), which it otherwise much resembles.

Nothapalus dohertyi (Smith), 1903.

This may probably also be placed in *Nothapalus*, which it resembles in its long last whorl and the straight profile of its outer lip. The transverse striation, however, is much more prominent than in other known members of the genus.

Genus *EUONYMA*, M. & P., 1896.

Euonyma lanceolata (Pfr.), 1854.

1854. *Bulimus lanceolatus*, Pfr. P. Z. S. p. 292.

1857. *Bulimus micans*, Pfr. Mal. Blätt. iv. p. 156.

1905. *Obeliscus natalensis*, Bnp. Proc. Malac. Soc. vi. p. 304.

These three species are identical.

I have previously pointed out that specimens in the British Museum identified as *micans* by Pfeiffer himself are entirely conspecific with his type of *lanceolata*. *Natalensis* was differentiated from the latter on account of having supposedly stronger sculpture; Mr. Burnup, however, has kindly permitted me to examine a large series of the species, which prove that the sculpture varies, to a great extent, in accordance with the state of preservation of the individual, being on the whole more prominent in fresh than in rubbed or weather-worn specimens. The type of *natalensis* was a beautiful fresh young shell, while all the older examples, labelled *lanceolata* and *micans*, in the British Museum are somewhat bleached and of smoother appearance, but the additional series shown me by Mr. Burnup prove that the sculpture is really the same throughout them all, and, except for slight dimorphism, there is practically no real difference between any of them.

Euonyma lymneæformis (M. & P.), 1901. (Pl. I. fig. 4.)

1901. *Obeliscus lymneæformis*, M. & P. Ann. & Mag. Nat. Hist. viii. p. 317, pl. ii. fig. 5.

Ever since its publication this species has been completely misunderstood. The authors' original figure accurately portrays their type, but a large series, kindly furnished by Mr. Burnup from the type-locality Karkloof and other districts prove that the type is abnormal. This shell shows no fewer than three fractures, at the apex, the fourth and the penultimate whorls, which are quite sufficient to account for

the malformation of its elongate, comparatively swollen later whorls and shortened aperture. As a matter of fact, Burnup has actually been able to match this deformed shell with another from the same locality, which has been broken at more than one stage of growth, and exhibits almost exactly the same deformities.

It is now clear that the normal form of *E. tymneæformis*, illustrated on Pl. I., is a well-known species, smoother and rather smaller than *E. lanceolata*, Pfr. (= *natalensis*, Bnp.), which has been misidentified and distributed during recent years as the true *lanceolata*, Pfr.

Euonyma magilensis (Craven), 1880.

1880. *Bulimus magilensis*, Crvn. P. Z. S. p. 217.

1913. *Euonyma achilles*, Prest. Rev. zool. Africaine, iii. p. 54.

This remarkable species is almost unique in its combination of broad blunt apex, shortened aperture, and perforation. The type of *magilensis* is merely a half-grown example of the beautiful *achilles* of Preston, and the latter name cannot be retained. Being of somewhat solid texture, even the most immature shells present a peculiarly mature appearance about the aperture, and some of these were distributed prior to 1914 under a manuscript Latin name recalling their very short form; they are quite inseparable from *magilensis*.

As *Homorus* and *Subulina* are invariably imperforate, it may be advisable to retain the present species in the South African genus *Euonyma* until something is known of its anatomy.

Genus NEOGLESSULA, Pilsbry, 1909.

Neoglessula paritura (Gould), 1850.

1850. *Achatina paritura*, Gld. Proc. Boston Soc. iii. p. 196.

1885. *Glessula bretignerei*, Chaper, Bull. Soc. Zool. Fr. x. p. 46.

1894. *Homorus assiniensis*, Chaper, Kob. Conch. Cab. p. 91.

Ancey suggested, in 1888, that *bretignerei* might prove to be identical with *paritura*, and comparison of authentic specimens in the British Museum leaves no room for doubt that Chaper's species must be placed in synonymy. Pilsbry has pointed out that the *assiniensis* mentioned by Kobelt is a misprint for *bretignerei*.

Paritura has been distributed in the past by at least one German authority under the name of *maloguettana*, Rang, but if Rang's figure and description are reliable the latter is perfectly distinct, having a darker and more slender shell than Gould's species.

Genus SUBULINA, Beck, 1837.

Subulina taruensis, sp. n. (Pl. I. fig. 16.)

Shell comparatively large, lanceolate, imperforate, thin, smooth, shining, normally transparent, and olivaceous. Spire much produced, sides nearly regular, apex mamillate. Whorls $12\frac{1}{2}$, nearly flat, slowly and regularly increasing, with practically no basal margination; the first 2 quite smooth, the sculpture on the remainder, only visible under a strong lens, consisting of close, straight, nearly vertical, transverse striæ, very faintly puckered just below the suture, which is simple and shallow. Aperture subovate, peristome simple, acute; outer lip straight in profile, receding to the base; columella concave, sharply and abruptly truncate at base.

Long. 22·3, lat. 4·3; apert., alt. 3·5, lat. 2·2; last whorl 6·7 mm.

Hab. KENYA, Taru Desert (*Percival*); UGANDA, between Mbarara and Kigezi (*Kemp*).

Although it hails from 600 miles westward, I am quite unable to separate a younger and fresher shell from the last-mentioned locality from the typical form; it contains 10 whorls and measures:—Long. 17·7, lat. 3·9; apert., alt. 3·3, lat. 2·1; last whorl 5·3 mm.

S. taruensis is easily distinguishable from most of the genus by its slender form and short flat whorls. The embryo contains 3 whorls, sculptured as described above, with markedly truncate columella.

Subulina turtoni, sp. n. (Pl. I. fig. 24.)

Shell of moderate size, elongate-turritiform, imperforate, thin, smooth, glossy, yellowish olivaceous. Spire produced, sides regular, apex submamillate. Whorls 8, convex, rounded at the periphery, regularly and gradually increasing, the first 2 or 3 smoothly microscopically punctate, remainder sculptured with close, faint, regular, straight, slightly oblique, transverse striæ; suture simple, rather deep. Aperture irregularly rhombic, peristome simple, acute; outer lip moderately outcurved, receding a little in a straight line to the base; columella short, inclined to the left, rather obliquely, though decidedly, truncate at the base.

Long. 11·1, lat. 3·1; apert., alt. 2·8, lat. 1·6; last whorl 4·8 mm.

The largest shell seen measures $15\cdot2 \times 3\cdot9$ mm.

Hab. S. RHODESIA, Khami (*Turton*); Bulawayo (in S. African Museum); Lusanyama District (*Quekett*).

Larger than any species hitherto described from South Africa, and not very closely resembling any known to me from further north, being a rather smaller form, with comparatively longer whorls, than *S. octona*, Brug., and its allies. I have much pleasure in naming this South African land-shell after its discoverer, Colonel W. H. Turton, as a tribute to the great work accomplished by him in regard to the marine fauna of the subcontinent.

Subulina viridula, sp. n. (Pl. I. fig. 25.)

Shell of fair size, elongate-turritiform, imperforate, thin, rather silky, transparent, dark olivaceous. Spire produced, slightly attenuate from the 6th whorl, apex narrowly rounded. Whorls 10, almost flat, regularly increasing, the first 2 smooth, remainder sculptured with well-defined, close, regular, nearly straight, vertical, transverse striae, very faint on the 3rd whorl and gradually increasing in strength; suture but little oblique, crenulate from the base of the 3rd whorl onward. Aperture subovate, peristome simple, acute; outer lip straight and almost vertical in profile; columella concave, sharply and abruptly truncate at base.

Long. 18.0, lat. 4.2; apert., alt. 4.1, lat. 2.0; last whorl 6.7 mm.

Hab. UGANDA, Kigezi, 6000 ft.; BELGIAN CONGO, Mukanda, near Lake Kivu (*Kemp*).

A pretty species of rather unusual colour, clearly differing in apical sculpture from *S. glyptocephala*, Pilsbry.

Subulina entebbana, Pollonera, 1907.

1907. *Subulina octona*, Chem., var. *entebbana*, Pollon. Boll. Mus. Torino, No. 568, p. 2.

1913. *Subulina victoriae*, Kob. Rev. Suisse Zool. xxi. p. 73.

Examples of this species were collected by Kemp at Jinja, Entebbe and Kampala, and distributed by Preston under the name of the first-mentioned locality. They appear to agree in every respect with *S. victoriae*, Kobelt, described from the Busoga District, in which Jinja is situated, and with *S. octona entebbana*, Pollon., and establish synonymy between them. Pollonera's name has precedence, and appears worthy of specific rank; the shell is far more strongly sculptured than that of *S. octona*.

Genus SUBULINISCUS, Pilsbry, 1919.

Subuliniform shells with spirally striate, acutely conoid, apical whorls.

Subuliniscus adjacens, sp. n. (Pl. I. fig. 12.)

Shell comparatively large, acuminate-turritiform, imperforate, thin, smooth, glossy, transparent, olivaceous. Spire produced, sides nearly regular, apex acute. Whorls 10, not very convex, gradually and regularly increasing, without basal margination; first $1\frac{1}{2}$ worn in the type and sparsely malleate, the sculpture of the remainder, under a strong lens, consisting of close, regular, nearly straight, slightly oblique, transverse striæ, chiefly visible just below the suture, and extremely close, regular, slightly undulating spiral striation, covering the transverse striæ and becoming plainer on each succeeding whorl; suture simple, moderately oblique, well defined. Aperture ovate, peristome simple, acute, outer lip straight in profile, receding a little to the base; columella slightly concave, abruptly, though not very noticeably, truncate at its extreme base.

Long. 22·3, lat. 5·7; apert., alt. 5·7, lat. 3·1; last whorl 9·6 mm.

Hab. KENYA, Larogi Hills (*Percival*).

This species appears to vary considerably in strength of sculpture, both the spiral and transverse striation being sometimes much fainter than as described above, in shells coinciding in all other respects.

Subuliniscus nyiroensis, sp. n. (Pl. I. fig. 14.)

Differs from *S. adjacens* in having very slightly more convex and longer whorls and in the apparent absence of spiral sculpture, except on the second whorl, on which there is a faint appearance, under a strong microscope, of distant, feather-formed, spiral lines; the transverse striæ, also, are a little fainter, and slightly more puckered below the suture. The shell contains 8 whorls, and measures:—

Long. 18·3, lat. 5·2; apert., alt. 4·9, lat. 2·8; last whorl 8·7 mm.

Hab. KENYA, Mt. Nyiro, 8300 ft. (*Percival*).

Subuliniscus marsabitensis, sp. n. (Pl. I. fig. 13.)

Very similar to *S. adjacens*, from which it differs chiefly in having noticeably shorter whorls; the spiral sculpture, also, is far fainter, being almost absent on the three earlier,

though clearly visible under a strong microscope on the later whorls. The shell contains $10\frac{1}{2}$ whorls, and measures :—

Long. 19·0, lat. 5·1 ; apert., alt. 5·0, lat. 2·5 ; last whorl 7·8 mm.

Hab. KENYA, north slope of Mt. Marsabit, 4600 ft. (*Percival*).

It is obvious that the last three species are very closely allied, being possibly derived from one parent stock, the members of which have gradually developed individual characters under diverse environmental conditions. Unless, however, intermediates subsequently occur, all seem entitled to distinct specific rank.

Subuliniscus urgnessensis, sp. n. (Pl. I. fig. 11.)

A more obese form than *S. adjacens*, with slightly flatter whorls. The sculpture is considerably stronger, being visible under a single lens and consisting of fairly strong, regular, straight, slightly oblique, transverse striæ on all but the first two whorls, and extremely close, regular, spiral striation first visible on the 2nd whorl and crossing the transverse sculpture ; under a microscope there is, further, an appearance of coarser, more distant, flat, spiral lines, interrupting the transverse ridges but not cutting the epidermis. The shell contains 9 whorls, and measures :—

Long. 18·8, lat. 6·7 ; apert., alt. 6·2, lat. 3·2 ; last whorl 9·5 mm.

Hab. KENYA, Urguess (*Percival*).

S. urgnessensis closely resembles in form *S. alticola* (d'Ailly) from Meru, but differs widely from it in sculpture, the transverse striæ in *alticola* being fainter and coarser and the spiral striation much weaker, so that it is impossible to confuse the two species unless intermediates occur.

Subuliniscus cornu-orycis, sp. n. (Pl. I. fig. 15.)

Shell of fair size, elongate-turritiform, imperforate, thin, smooth, nearly transparent, dark olivaceous. Spire produced, very slightly alternate about the 6th whorl, apex acute. Whorls 9, nearly flat, very gradually increasing, the last angulate at the periphery, the first 3 almost devoid of transverse sculpture, which appears weakly on the second whorl, the remainder with close, faint, nearly straight, slightly oblique transverse striæ, stronger and bent backward just below the suture, and all the whorls covered with extremely close, fine, undulating, spiral sculpture ; suture simple, shallow, only slightly oblique. Aperture subrhombic, rounded at base ; peristome simple, acute : outer lip almost

straight, receding moderately to the base; columella almost rectangularly truncate.

Long. 13.5, lat. 3.8; apert., alt. 3.2, lat. 1.7; last whorl 6.0 mm.

Hab. KENYA, Mt. Nyiro, 8300 ft. (*Percival*).

The type is somewhat immature, but differs beyond compare from the last four species. It is far more nearly allied to *S. lucasi*, Pilsbry, from which it may be distinguished by its less regular spire, darker colour, and slightly coarser transverse sculpture, while the spiral striation is far more clearly visible under equally strong magnification. It must be admitted that none of these features are in themselves of much specific value, but taken together, and considering the wide distance between the localities of the two species, it seems advisable to accord *S. cornu-orycis* specific, rather than subspecific, rank.

Subuliniscus alticola (d'Ailly), 1910. (Pl. I. fig. 10.)

1910. *Petriola alticola*, d'Ailly, Kilimandjaro, i. 6, p. 27.

As the publication in which this little-known species was described is not commonly available, I give a photograph of a paratype from Meru.

EXPLANATION OF PLATE I.

- Fig.* 1. *Homorus burnessi*, Conn.
- Fig.* 2. — *illitus*, Conn.
- Fig.* 3. — *zebra*, Conn.
- Fig.* 4. *Euonyma lymneæformis* (M. & P.), normal form.
- Fig.* 5. *Homorus egregius*, Preston, var. *inflata*, Conn.
- Fig.* 6. *Pseudoglessula batesi*, Conn.
- Fig.* 7. — —, var. *major*, Conn.
- Fig.* 8. — *perobtusa*, Conn.
- Fig.* 9. *Homorus woodhousei*, Conn.
- Fig.* 10. *Subuliniscus alticola* (d'Ailly).
- Fig.* 11. — *urguessensis*, Conn.
- Fig.* 12. — *adjacens*, Conn.
- Fig.* 13. — *marsabitensis*, Conn.
- Fig.* 14. — *nyiroensis*, Conn.
- Fig.* 15. — *cornuorycis*, Conn.
- Fig.* 16. *Subulina taruensis*, Conn.
- Fig.* 17. *Pseudoglessula transenna*, Conn.
- Fig.* 18. — *solitudinum*, Conn.
- Fig.* 19. — *ingloria*, Conn.
- Fig.* 20. *Nothapalus iredalei*, Preston.
- Fig.* 21. — —, (?) forma *tumida*.
- Fig.* 22. *Pseudoglessula mutabilis*, Conn.
- Fig.* 23. — *mutandana*, Conn.
- Fig.* 24. *Subulina turtoni*, Conn.
- Fig.* 25. — *viridula*, Conn.
- Fig.* 26. *Nothapalus ugandanus*, Conn.
- Fig.* 27. — *adelus*, Conn.

All figures actual size.

